Green STEAM Incubator

GREEN STEAM INCUBATOR

Design Thinking Models for the development of eco-friendly solutions.

Partners

The Consortium

CITIZENS IN POWER

Center for Social Innovation

LogoPsyCom

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The reality

The world is a place of rapid changes, with problems and challenges arising every day.
Humans all over the world are trying to solve daily problems.

STEAM's view

Problem solving comes from interdisciplinarity, creativity, authentic or real-world learning and project-centered thinking.

Design Thinking Model

Gives teachers support or structures to enact the messy creative practises in learn-by-doing within the context of teaching.

What is Design Thinking?

A framework or a way in each designers think and apply their mental processes to design objects, services or systems for the end result of elegant and beautiful products.

- User-centered & action-oriented approach to Innovation, that emphasizes intedisciplinary collaboration and problem-solving modes.

- Combines creative and alanyltical approaches, something very popular in business schools and interdisciplinary approaches.

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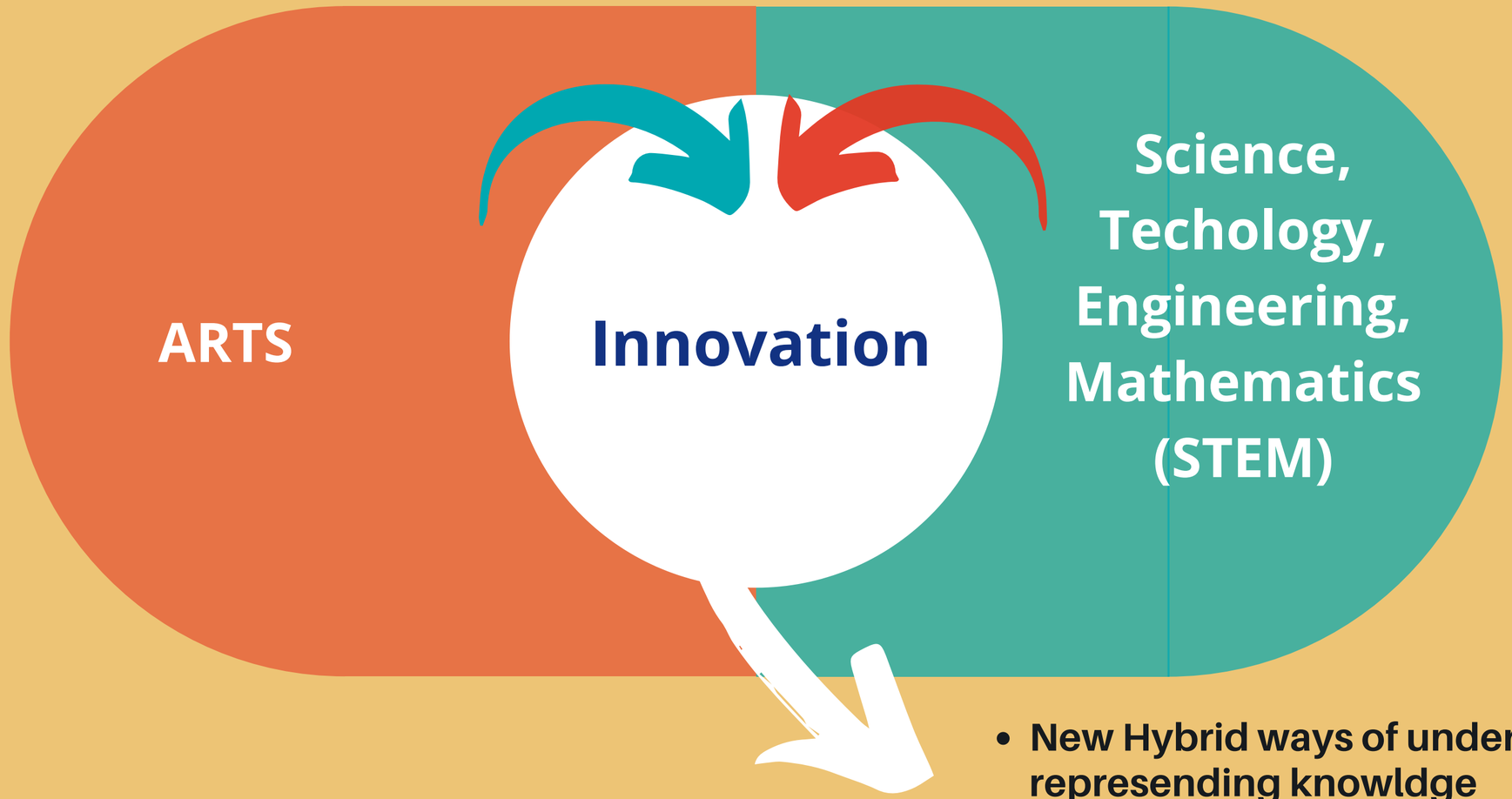
Design Activity + Analytical Activity & Knowledge



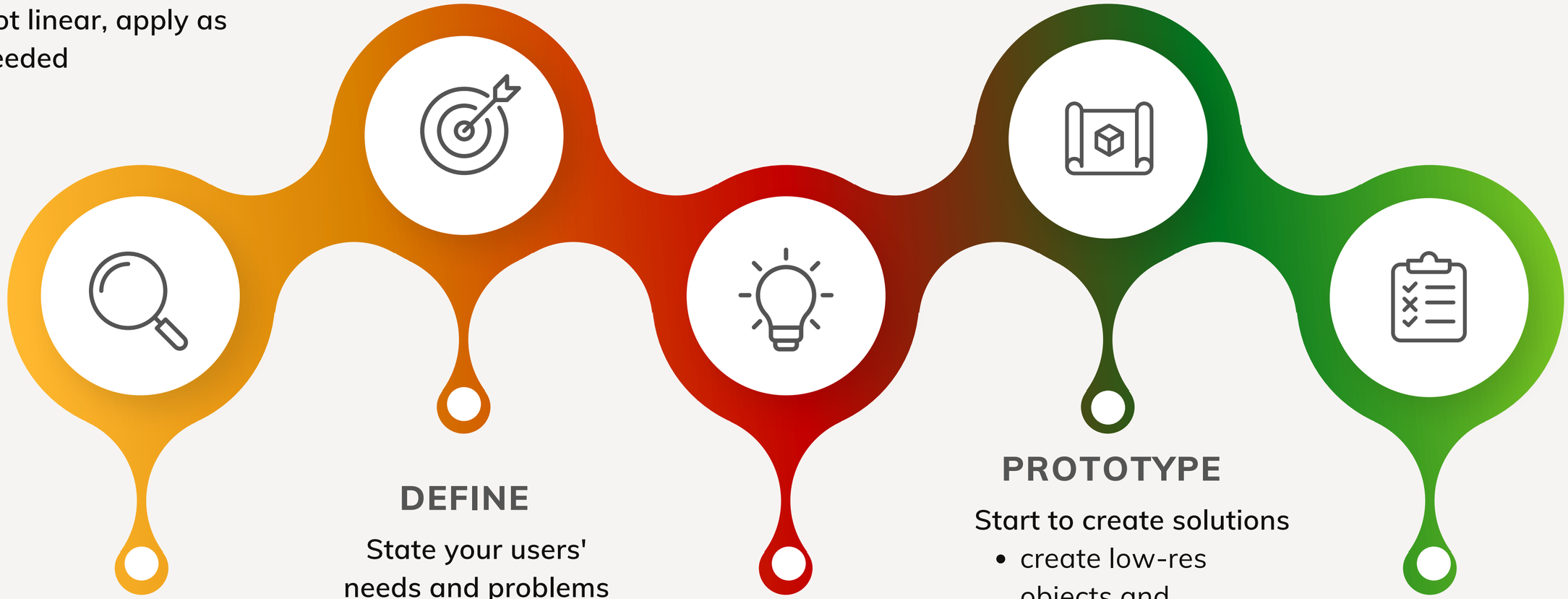
- New Hybrid ways of understanding and represending knowldge
- Commercialization

What is the mindset around Design Thinking process?

Habits of the mind

01	*Human- or User-centered*	**Developing empathy for the people for whom your designing or else know as the end-users.** *Thinking our users or audience first.*
02	*Bias towards Action*	**Spending more time doing and creating, rather than talking.** *Actions speak louder than words.*
03	*Radical Collaboration*	**Bringing together innovators and stakeholders from diverse backgrounds and viewpoints.** *Diversity in experiences and thinking is a strength.*
04	*Culture of Prototyping*	**Building to think and learn from multiple iterations.** *Failure is an opportunity to learn.*
05	*Show, do not tell*	**Communicating vision** in an impactful way to your audience.
06	*Mindfullness of process*	**Knowing the goals and stages of the process.** *Have a Strategy in place, write a business plan.*

Not linear, apply as needed



EMPHATHIZE

Research users' needs

- contuct interviews
- uncover emotions
- seek stories

DEFINE

State your users' needs and problems

- create human-centric problem statements
- identify meaningful surprises and tensions
- infer insignts

IDEATE

Challenge assumptions and create ideas

- brainstrorm radical ideas
- build on other's ideas
- suspend judgement

PROTOTYPE

Start to create solutions

- create low-res objects and experiences
- role play to understand key features
- quickly build to think & learn

TEST & VALIDATE

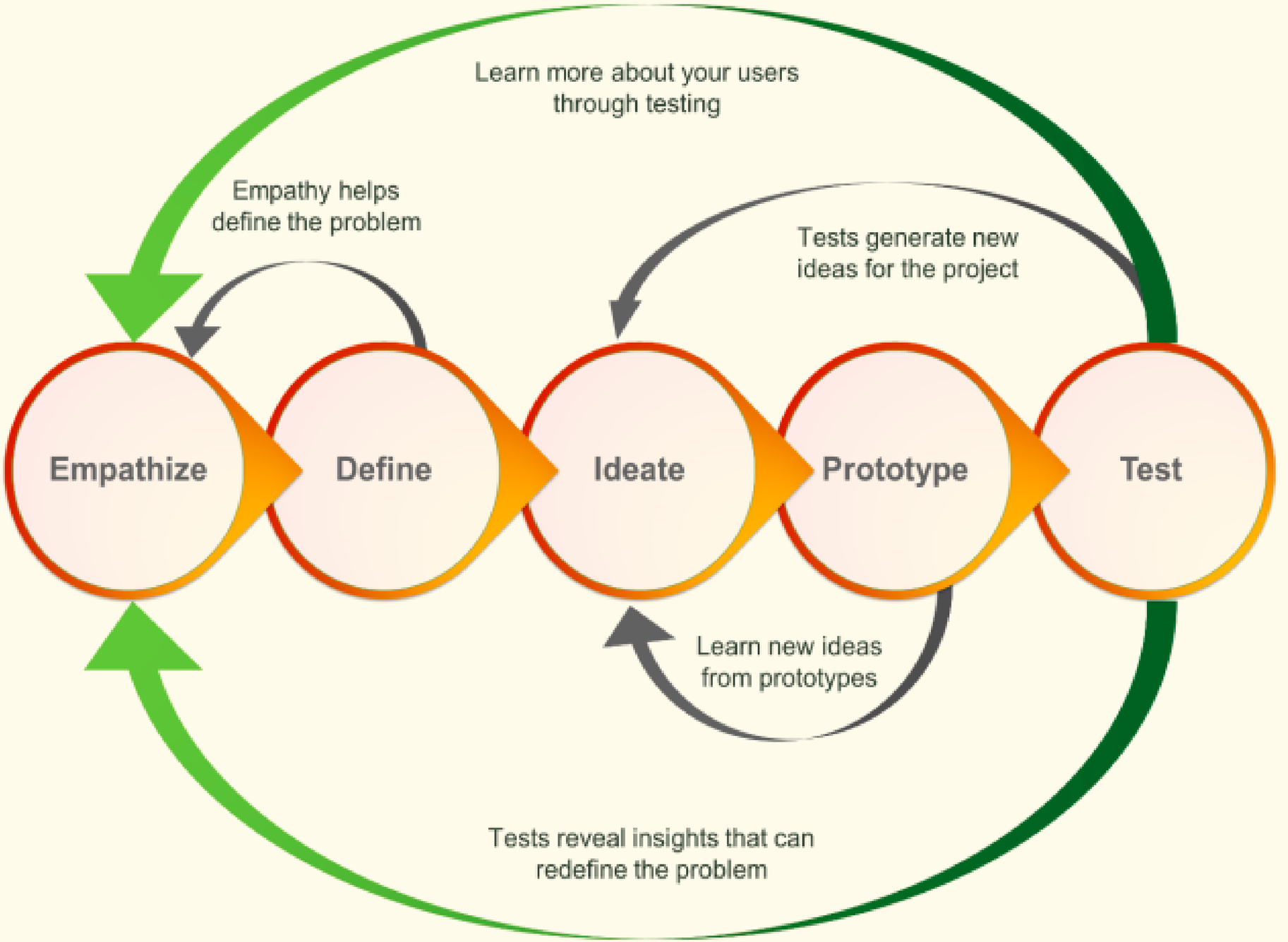
Try your solutions out

- test solutions and gather data
- gain deeper empathy
- embrace failure

Non - linear design thinking process that examines the problem from 3 different lenses:

1. **Desirability**
2. **Viability**
3. **Feasibility**

Constrains are not bad, they reinforce innovation and creativity.



GOOGLE VENTURES: GOOGLE DESIGN SPRINTS MODEL

The goal is to give a prototype to end-users to a real problem.

day 1

understand

- who are the users
- what are their needs
- what is the context
- competitor review
- formulate strategy

2

diverge

- envision
- develop lots of solutions
- ideate

3

decide

- choose the best idea
- storyboard the idea

4

prototype

- build something quick and dirty to show to users
- focus on usability not making it beautiful

5

validate

- show the prototype to real users outside the organisation
- learn what doesn't work

LET'S PUT THIS INTO

PRACTICE

Participants will come up with their own ideas of environmental projects and eco - friendly solutions, through the method of Design Thinking - **Final Day!**

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STAGES OF METHDOLOGY / PRACTICAL APPLICATIONS

Stage 1: Empathize

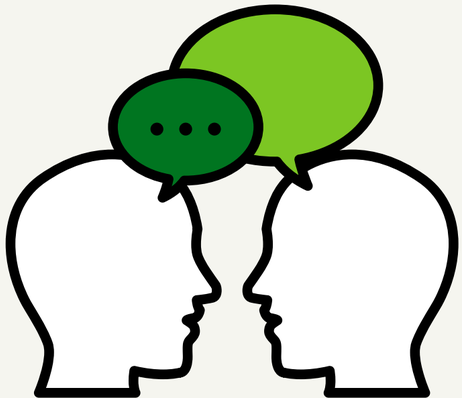
Observe & Understand Our User

What is Important to them?

Ask for experience, needs & interests

Our Example

- Get to know our agroentrepreneurs: who they are, activities in their farms, future plans, possible barriers
- Approach, Discuss & Interview
- Interview data are further used for action plans



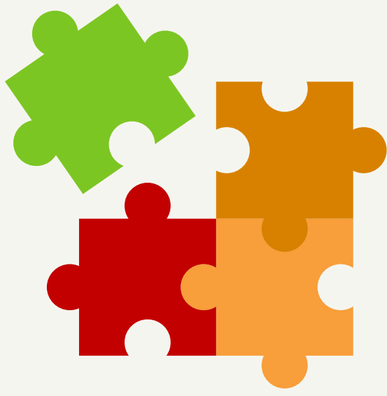
Stage 2: Define

Synthesize your findings to highlight users' needs & other insights

Put the puzzle pieces together

Our Example

- Through this interaction, we try to identify problems, needs and missing gaps.
- Why exactly is this a problem for the target group?
- Let's assume that there is a need for a composting machine



Stage 3: Ideate

Generate ideas through brainstorming, mind mapping

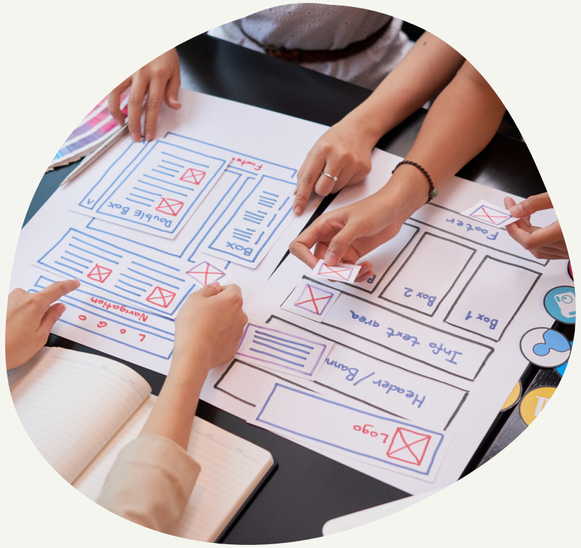
Identify the best solution

Use ideation methods like Brainstrorm, Gamestorm, Crowdstorm and Workshops

Our Example

- Brainstorm & Research about Creating a Composting Machine with eco - friendly materials
- Restrictions are being considered (e.g. cost)
- May actively involve the target audience

Stage 4: Prototype



Plan your approach / Materials you need

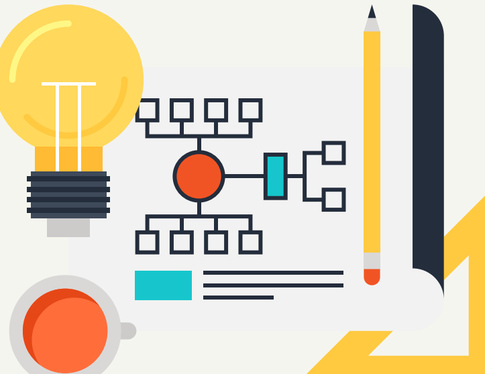
Keep your user in mind

Initial sketches with labels and measurements

Physically build something.

Our Example

- We prototype 1 idea
- Needed materials / First Version Design of the Composting Machine
- Writing down the steps & difficulties is vital



Stage 5: Test & Validate

Think about how you will test your prototype & Improvements on new prototypes

Testing methods are: usability testing (tests effectiveness and satisfaction), concept testing (consumer's acceptance of new idea), Focus group (discuss needs and barriers), Surveys (satisfaction), A/B Testing (comparison between 2 elements), Beta testing (final product functionality)

Our Example

- We test the machine with end-users
- We select feedback/comments
- Repeat the whole process by making improvements

Importance of Design Thinking Process

Endorses a Constructivist approach of learning and promotes a growth mindset.

SOFT SKILLS

- Team - based learning process (communication & collaboration)
- Opportunities to engage in practice - oriented & holistic modes of constructivist learning
- Technical skills (discipline specific expertise) & Personal Qualities (creativity and open-mindness)

PEDAGOGICAL ASPECT

- Chosen as a pedagogical method in teaching innovation skills in entrepreneurship & business courses
- Can be adopted as an underlying pedagogical method for promoting the facilitation of skills

Thank you!

Questions?

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